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THE JOURNAL OF SCHOOL HEALTH

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RESUMÉ OF SCHOOL HEALTH STUDIES

MAYHEW DERRYBERRY, Ph.D.

United States Public Health Service

It is the object of this paper to review some of the conclusions of studies of school health programs in which I have participated. These studies have all been evaluations and therefore have attemped to find vulnerable spots, rather than praise excellent aspects of the work.

The school health program is the one community program which attempts to give direct service to all of the population for which it is designed. It is also one of the most expensive of community health functions. Of twelve large cities in the country, ten spend more than $1.00 per child and three spent $2.00 per child. In spite of this wide application and expense, the school health program has been judged the least efficient of all public health services. As evidence, in spite of the efforts directed toward the discovery and physical defects there is little evidence that the proportion of school children with reported defects has decreased from year to year or from grade to grade. Again there is little evidence that school health procedures have been successful in reducing the incidence of communicable diseases.

Our studies would indicate that the deficiencies are in part due to the large number of various professional people participating in the program, e.g., school physicians, school nurses, educators (teachers, physical educators, supervisors, and administrators), private and clinic physicians, and perhaps a dental hygienist. The complexity of administrative relationships that arise from individuals with such widely divergent interests, training and experience, and the lack of coordination of their activities seem to account for many of the deficiencies in our school health program.

Evidence of this lack of integration is found in the divergent opinions of physicians examining the same group of children. Nutritional status and the need for tonsillectomies are items upon which divergence of opinion is frequently found. These disagreements of professional opinion make it most difficult for the public

Read before National Organization of Public Health Nursing, Kansas City, Mo., April 27, 1938.

health nurse who must follow-up the doctor's recommendation and attempt to convince the parents of the need for attention.

We all realize that the conditions under which the school physician works—seeing a child once a year for five minutes or less without history or laboratory aids — are not conducive to accurate diagnosis. The educators tell the school physicians that they must aim "to provide a chance to achieve the limit of the child's capacity for well being" and "to discover all physical defects, diseases, incipient conditions and tendencies toward ill health—and find sources for remedy." It is not possible, under the conditions which many school physicians work, for them to agree to deliver infallible decisions, and frequently their recommendations must hinge on a "reasonable doubt" of the child's conditions, without the benefits of a more thorough examination. Thus a lack of consideration of the physician's problems by the school administrators leads to a waste of the physician's and the school's time, and frequently, ill-feeling of the parents on receiving an inaccurate diagnosis.

This lack of integration appears also in the absence of cooperative activity between the teachers and the school nurses. Our studies showed that out of 225 teachers interviewed less than a third could name a single child whom the nurse had followed-up for a physical defect; not because the nurse had not made follow-up calls, but simply because the teacher did not know. On the other hand, less than a third of the teachers had noted and discussed with the nurse symptoms of some physical defect reflected in the child's class-room behavior.

The nurses also frequently lacked professional data which they should have had from the medical examiner. Only an occasional nurse had bothered to contact the teacher regarding the child's standing in school work, tendencies to fatigue, posture, and the like.

Other evidence of lack of coordination was revealed by our studies. Rarely was a teacher present at the physical examination or informed on the doctor's findings of her pupils. In only a few schools, served by a dental hygienist, were the teachers given demonstrations of the conditions of the pupil's mouths as a means of interesting the teacher in dental care. About a fifth of the time, the teachers had no way of knowing when the nurse was in the school building.

As a result of these break-downs in coordination, the children fail to benefit from the program. Of 275 serious un-corrected vision defects which were studied to ascertain why these children had not received the attention they deserved, it was found that lack of coordination was responsible for no follow-up in 40 percent of the cases and for a type of follow-up that produced no action towards getting the child to an ophthalmologist in an additional 21 percent. Of 162 cases of low nutritional status, 35 per-

cent had not been followed up, and in an additional 16 percent the follow-up had been ineffective.

Again, of 3000 children in 9 schools inspected for pediculosis, 13 percent were found infested with nits or lice. A similar inspection one month later revealed 20 percent infested, an increase in every school. Some nurses maintained the attitude that it was the teacher's responsibility and undertook the task alone. In none of the schools was there discussion between nurse and teacher as to what part each might play in the control of pediculosis.

One of the important contributing factors to this lack of coordination is inadequate school health records. Some of the difficulties are as follows:

1. The physician records his findings in code, not infrequently designed by someone more interested in statistics than in the individual child. It is difficult for the nurse and the teacher to interpret to the parent the simple notation 4x tonsil. Such notations without supplementary knowledge do not provide her with data which will make her follow-up convincing.

2. Entries made by nurses after interviews with parents are inadequate. For example, such entries as "Mother interviewed and advised regarding child's defects," "Father conferred with," or "Social problem in home advised about" offer very little help to the teacher or other worker who wishes to know what the nurse discovered or advised.

3. Few record forms provide space for the teacher to write down her observations or what instructions she has given the child. Thus records whose main function is to improve the service to the individual child are, all too frequently, so designed and kept that they defeat their principal objective.

Another deficiency was the tendency to record defects and follow them up even though there were not sufficient corrective facilities in the community to treat the conditions found. It seems unwise and wasteful to inform a parent of a defect unless we are able to tell her how she might remedy the condition.

How can one correct these faults with our school health program? Unfortunately, there is no perfect program which one may recommend for universal adoption, because conditions vary in each community. However, there is one cardinal principle which should guide administrative procedure in any community.

1. *The activities of all those working in school health must be coordinated and focused on a common objective.* The application of this principle means more than agreeing to work toward desirable objectives, more than administrators getting together and outlining the functions of each member of the school health staff. It definitely means some method of organization and some mecha-

nism whereby the several field workers in the program meet and discuss their contribution to its objectives in terms of reaching desired ends with particular children. It implies mutual exchange of suggestions and criticism between doctor, nurse, teacher, principal, dentist, and physical educator. This coordination must be so set up that the teacher has free access to the school physician, and may discuss with him abnormal symptoms she has observed in her pupils, so that the nurse in her follow-up visit is able to inform the parent that Sally squints in the classroom and fails to see words on the blackboard, and so that the nurse may inform the teacher of conditions she has found in the home and the plans made with the parent in order that the teacher may be an ally in helping Sally obtain the needed glasses.

The principle of coordinating the activities of all members of the program in terms of the contribution that each is able to make, implies a complete change in our examination procedure. The teacher's observations should be discussed with the physician before or at the time of the examination. The physician's advice to the teacher about her pupils would sharpen the accuracy and significance of her observations, and enhance her interest in the health of each individual child. The teacher would also learn first hand the conditions of her children. Such a program would require more time of the physician and nurse and would necessitate some reduction in the number examined. It has been suggested that the physician discontinue making routine examinations of all children and focus his energy on the cases that have behavior symptoms suggesting the need of medical attention.

The realization of such a coordinated system would require a cumulative record understandable and available to all members of the school health staff. The information on such a record should be concise yet complete. These requirements of a record are easily stated but difficult of practical achievement.

The principles or coordination must also extend outside the school health program to the community activities and resources. It is unwise to insist on correction of defects when no local facilities exist for such correction. Some claim that such a procedure creates a demand for facilities which leads to their provision. Would it not be better to focus directly on first providing the needed facility?

Statement of principles is simple. Practical application of the principle presents the real problem. No executive order or arm chair decision will increase very materially the effectiveness of our school health programs. Experimental installation of procedures is the only way that will succeed. The doctor, the nurse, the teacher, the principal, the dentist, and any others concerned in the field operation of the program having agreed on the general

objectives and philosophy must work out the changes which seem to produce results by the experimental method.

Looking back over our research and what I have said to you today, I believe it all can be summarized in the word "Cooperation," *which literally means working together.* Though this is the second time I have said this I dare to repeat it, for to my way of thinking the most pressing problem in school health today is for all the members of the school health staff to learn modes and mechanisms of cooperative endeavor. Condensed by H. D. Chope, M.D.

* * * * *

Mental Hygiene in the Schools,—I am convinced that punishment has no place in an educational program. I believe in discipline, which is teaching a child to conduct himself according to law and order. I have seen some normal psychological processes in the development of the individual as he passes to the adult stage. These are: the self-examination period, the formation of individual opinion, the planning of a life work, the interest in sex, boastful and bashful episodes, and the formation of an ideal. The parents, the teachers, and the psychiatrist can do nothing better than to stand by and to guard this normal process of unfolding, and here and there offer unrecognized suggestions, encouragement, and wholesome sympathy, showing intelligent understanding of the juvenile needs. In this way we can cooperatively practice mental hygiene.

I am not convinced that we have been correct in forcing sex information upon our children, which they could acquire naturally from life itself. I have been shocked at some of the frankness shown by high school boys and girls in regard to sex. Sex is a very personal affair, and I am convinced that its problems should be dealt with in privacy.

If I would be a teacher I would strive to keep the following attitude toward the above normal interests:

First; I would always try to use a sense of fair play.
Second; I would strive to follow reason instead of emotion.
Third; I would strive to use intelligence to understand reality.
Fourth; I would have a sense of humor.
Fifth; I would stand up for my convictions, but always see the student's point of view.
Sixth; I would strive to give the pupil capacity to adjust to changing conditions.

I have observed that one can learn with less difficulty and with greater pleasure when the starting point of learning is within the experience of the individual. The 30,000,000 boys and girls in our schools today offer a definite challenge to the teacher. By O. R. Yoder, M.D., Assistant Medical Superintendent, Ypsilanti State Hospital. The Michigan Education Journal, November, 1938, p. 132. Abstracted by Earl E. Kleinschmidt.

SCHOOL NURSING IN DENVER*

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There are two different opinions regarding the function of the school nurse in the school. One view contends that the nurse should be prepared through education and training to be a teacher; the other that she should be prepared by education and training to be a public health nurse working for the school child. I believe these two opinions tend to confuse the standards of qualifications for school nurses.

It would seem that one contribution that is essentially the nurse's is the securing of information, through means of friendly home visits, concerning the physical, emotional, and financial situation in the home, and using the information in helping the teacher to understand the child in relation to his home. To secure this information it is essential that the nurse should visit the home.

In Denver, nurses do not make health inspections, including dental inspections, because there are doctors and dentists to perform this function. The nurses are not entirely responsible for first aid, much of it being delegated to properly equipped personnel.

The school health service continues to carry the immunization program for pupils whose parents are unable to pay for private service. We have also the responsibility of urging those parents who can afford private services to have that service performed, which is a much more difficult task than persuading those entitled to free service to accept. Neither smallpox or diphtheria immunization is compulsory in Denver. In spite of growing preschool activities, there are still many children entering school in Denver unprotected against smallpox and diphtheria; and of course smallpox immunization at least, even though secured during infant and preschool age, must be repeated at intervals during school life for continued immunity. Although this service requires a great deal of time, it is helpful to know how well protected the children are.

Weighing and measuring is still performed semi-annually by the nurse in conjunction with physical education teacher. Less emphasis is placed on underweight than in the past and more on continued growth.

Vision and hearing tests are compulsory by state law, and are performed by the nurse. Great care is exercised not to sug-

* Read at the Joint Session of the American School of Health Association and of the Public Health Nursing Section of the American Public Health Association at Kansas City, Missouri, October 25, 1938.

gest that a child needs glasses, but nevertheless we hear tales of parents telling their doctor the nurse said the child needs glasses. Not all the defects are discovered in the simple test, although some symptoms other than myopia can be observed.

In order to decrease the emphasis on correction, and consequently to extend the follow-up to attainment of better health, we ceased to compare one nurse's corrections with another. I doubt if the plan has caused any great change—it may take a longer time to bring about the other point of view.

Some home hygiene classes are taught by nurses to pupils in junior and senior high schools and to parents of school children. The senior high school home hygiene class is the regular Red Cross course. The junior high school classes are modified somewhat. Those taught to parents are the regular type also. Some first aid classes are taught at the request of parents.

Nurses are encouraged to attend Parent-Teacher Association meetings as frequently as time permits, to participate in the program when invited, and to assist in securing speakers on health subjects. This is an excellent means for the nurse to meet the parents of the pupils in her school, and to establish friendly relationships.

One of the interesting things in the health service of the Denver Public Schools has been the nutrition program carried on by the Junior League for the past several years. For some years before this, the Junior League had operated a home for undernourished and underprivileged children. The children were selected from school children, were taken to the home and kept there in very favorable surroundings. These children almost invariably gained weight, increased in vitality, and when in fine condition were returned to their homes. Also, almost invariably, in spite of continued follow-up, re-examination, and return to the home for visit, they lost a considerable part of the gains they had made. After repeated experience of this type, the Junior League members became discouraged, and planned to do a different type of thing. Since the majority of children in their home were public school pupils, they, the Junior League members, presented their plan to the schools.

The plan was to offer physical examinations to all the pupils of the schools in which the program was located, and from the results of these examinations select the pupils most in need of care—the malnourished, the tuberculosis contact, the restless and irritable child, the rheumatic child, the children recovering from illness, and those with cardiac involvement. Parents' cooperation and participation had to be secured. A nourishing lunch is served and followed by a rest period, during which the children frequently sleep. Home hygiene classes have been held for the parents, and

lectures have been given on various points in the care of their children. The past two years the Junior League members themselves have supervised the lunch and rest periods, thus releasing the nurse to do more of the things that require a nurse to perform. This program seems to have been much more satisfactory to all concerned than the preceding one, and the Junior League members have been happier since they have actually been doing some of this work.

Nurses must be continually on guard observing themselves lest they assume some of the responsibility that belongs to the parents. It is easy for the nurse to make appointments for the parents for examination of their children. I believe that when the nurse has described to the parent available resources for his need that she has done her part and the parent should carry on. Of course the nurse may need to encourage the parent to act, but only in the most unusual instance does the nurse actually take a patient to the clinic. Car fare is available for those without funds, but the parent must make and keep appointments.

Nurses have in their possession, or can secure, magazines, pamphlets, and books with reliable material for the teacher to use in her health teaching. They may enter the classroom and assist the teacher in developing favorable attitudes toward health examination, dental examination, immunization, and vision and hearing tests. Nurses are also requested by the teachers to talk to the pupils when there are health implications in projects they are developing.

We are much in need of a psychiatrist on the staff for child guidance. Only a very small fraction of the pupils are seen by a psychiatrist in time to prevent mental illness.

If, and when, we ever are a large enough staff to do well all the things outlined, we must assume responsibility for more intensive follow-up of convalescent children returning to school, and of children with cardiac ailments.

At the beginning, I said that there were two different opinions regarding the function of the school nurse. You no doubt realize by now that it is my opinion that she should be a public health nurse working in the school environment and prepared to be such. However, I do believe that she should be familiar with the principles and philosophy of education and know the learning process, because day after day in school and in the home, by word and by example, she will be teaching health to children and their parents.

DO YOUR SCHOOL NURSE'S RECORDS FOR THE YEAR SHOW PROGRESS?*

ANN W. DINEGAN, R.N., B.S.

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Although the functions of the public health nurse in the schools have changed and enlarged considerably in the last few years, it would appear from reading over the annual reports of school nurses throughout the state that many communities are still receiving much the same type of school nursing service as provided in earlier days.

In the original "Objectives of Public Health Nursing" prepared by the National Organization for Public Health Nurses in 1931, emphasis was placed on the various activities of the school nurse in the following order: participation in the communicable disease control program; assistance to the physician in medical inspection and in the routine periodic physical examination of the school child; assistance in securing the correction of defects; assistance in securing special examinations and such follow-up as is necessary; participation in the promotion of hygiene and sanitation of the school plant; assistance in securing proper instruction of pupils and parents in the principles of healthy living; provision for or supervision of nursing care to all sick children. Since 1931 there have been continual changes and developments in the public health movement as a whole, which have necessarily brought changes in the types of activities suggested for the public health nurses in the schools. In 1936 the National Organization for Public Health Nurses revised the "Objectives in Public Health Nursing" in an attempt to reflect present day thinking with regard to these changes. It is therefore quite interesting to compare the new functions of the school nurse with the old and to note the changes in emphasis.

Today the public health nurses in the schools contribute to the health program first "through participating in the formulation and development of a health education program based on the needs of the pupils." This bears out the conclusion reached by leaders in school health work that the primary purpose of the public health nurses in the schools is education in healthy living. The educational program of the nurse should influence every activity, both in the school and in the homes she visits, emphasizing the positive aspects of health promotion through health education rather than the negative aspects of correction of defects and the control of

* Reprinted from Contact (Feb. 1939, p. 1), published by Massachusetts Department of Public Health.

contagion. The health program of the school nurse today should be worked out as part of the general educational program and not as a separate service.

She should "assist physicians in the examination of pupils and the interpretation of findings to teachers, parents, and children." The purpose of the health examination at school should be for the education of the child and not for the detection of physical defects. Since this is intended to be an educational experience, it should be planned by the teacher as well as by the nurse and the physician. The classroom teacher finds it of advantage to help the nurse and physician at the examinations as well as with the preliminary preparations. Through participation she derives a greater interest in the child, and she enlarges her own knowledge both of signs of health and of deviations from the normal. The results of the health examination should be used as the basis for the follow-up by the nurse and the teacher in their work with parents and the individual child, also for the educational program of the school. Parents should be urged to be present at the time of the health examination in order that they may contribute valuable information about health practices, which will help the school fulfill more adequately its function of health guidance. It gives the opportunity of teaching the close relationship between health and school progress, which may not have been realized previously by some parents. It also gives an opportunity for the physician to discuss with the parents the need for the correction of any physical defects noted, thus saving considerable time of the nurse in making home visits for this purpose.

The school nurse "teaches the value of adequate health supervision and facilities for medical and nursing care and assists in securing corrections of defects." This function again emphasizes the preventive and educational aspects although provision is made for the nurse to take her share of responsibility for necessary corrections. Every effort should be made by the nurse to bring parents who have not been able to be present at the health examination, to the school to discuss plans for securing correction of defects. It increases their feeling of responsibility, and saves a great deal of the nurse's time which can well be spent on other activities. Since the psychological time for impressing the parents with the importance of securing correction of defects is as soon after the defect is noted as possible, time should be allowed for these conferences when the nurse is arranging her educational program in connection with the health examinations.

The school nurse "inspects pupils and instructs teachers, parents and pupils to observe and recognize deviations from normal health." Since the average school nurse is not able to be present in every schoolroom each day, it is quite necessary that she arrange with the superintendent or the principal for a time early in the

school year when she may discuss with the teachers the health status of the school and signs of health and of those symptoms which indicate deviations from the normal. She can educate the parents along these lines through the Parent Teacher Association, Community Club groups, and individually.

The school nurse "assists in the control of communicable diseases through teaching the recognition of early symptoms, the importance of isolation and the value of immunization." This activity also calls for a definite plan for education by the nurse of the teachers, parents, and pupils. The regulations of the department of health governing the control of contagion should be discussed. Copies of the "Isolation and Quarantine Requirements" provided by the State Department of Public Health should be supplied to every teacher for reference and to parents where advisable.

The school nurse "promotes the maintenance of a healthy school environment—physical, emotional, and social." She must be ready to render such assistance to school authorities as her background of science can contribute. An up-to-date file of sound reference material on health subjects for the use of teachers who have not had the advantages of instruction in health education is of invaluable assistance.

The school nurse "arranges for the care of emergency and minor injuries and in accordance with medical standing orders." All emergencies should be referred to the school physician or nurse if they are in the building, but when they are not, teachers should know where to find first aid materials, and should be able to administer first aid. It has been found advisable in certain situations to have some person, designated by the principal, because of fitness to meet this kind of situation, take the responsibility in emergencies when the nurse is not in the building. This person should be carefully instructed by the nurse as to procedures which should be carried out and the other teachers should know to whom to report emergencies.

The school nurse "participates in a program for the prevention of handicaps and the care and education of handicapped children";

"Develops relationships to coordinate school nursing activities with all other health forces of school, home, and community to promote community health resources."

No longer is the nurse an isolated unit in the school. She is part of the community health program. She fulfills this part by explaining community agencies and facilities to the school, linking them up to the school health program and correlating her nursing program with other nursing and social welfare programs in the community.

The school nurse "participates in curriculum making. Nurses who are qualified may instruct classes in principles of healthful living and care of the sick."

This most recent outline of functions of the public health nurse in schools gives quite a different picture of what her service should be than was outlined in 1931 by the National Organization for Public Health Nurses. Undoubtedly the actual picture of school nursing services has changed in a great many communities to a far greater extent than is shown in the majority of annual reports, but would not this be a place to give publicity to the broader conception of school nursing service? In order to prepare the kind of report that would give a more comprehensive interpretation of the nursing service to the public, better record keeping will need to be stimulated on the cumulative basis. More of the work which the school nurse is supposedly doing should be recorded in order to show her accomplishments in relation to her aims from month to month and year to year, not only numerically but in narrative form. If the general purposes of the records and statistics of any agency are to assist the individual nurse and the employing agency in rendering a better quality of service and to give a basis for studying and measuring community needs and the program of the school nurse as it relates to these needs, do you feel that your present school nursing records fulfill these purposes?

* * * * *

PERSONALS

Roll H. Markwith, M.D.,—Governor John W. Bricker of Ohio has appointed Roll H. Markwith, M.D., Akron, to the position of State Director of Health.

Dr. Markwith has served as health commissioner of the Summit county general health district since 1922, and is president of the Ohio Federation of Public Health Officials. He was born in Greenville, Ohio, and was graduated from the College of Medicine, Ohio State University, in 1917. Following graduation he served as resident physician in Protestant (White Cross) Hospital. He was a first lieutenant in the Medical Corps, United States army, during the world war, and has had post-graduate training at Yale, the Rockefeller Institute, and the University of Dijon, France.

* * * * *

C. D. Hart, M.D., C.P.H.,—Dr. C. H. Hart, formerly Director of District Health Department No. 6 at Newberry, Michigan, has been appointed Health Officer of the City of Savannah and Chatham County, Georgia. The appointment became effective, April 1, 1939.

THE INCIDENCE OF VINCENT'S INFECTION IN THE SCHOOL CHILDREN OF KANSAS*

LEON R. KRAMER, D.D.S.

Director, Division of Dental Hygiene,
Kansas State Board of Health

"In France, during the (world) war, trench mouth was more common than were typhoid and malaria during the Spanish war." This statement was made by Bloodgood, in his article on "Oral Lesions Due to Vincent's Angina," in the Journal of the American Medical Association, April 9, 1937. Vincent's infection has been discussed from almost every angle during the last twenty years, in medical and dental societies. There are very few localities, which have not at sometime had to fight a mild or severe epidemic of Vincent's infection. It is such a common occurrence that little importance is attached to it. Not until this disease attacked an entire district of a state, including five counties with more than 40% of the population acutely infected, did Vincent's infection demand the attention of medical science as a definite menace to public health. Medical literature relates many instances where Vincent's infection is associated with chronic sore throat, sinusitis, oral lesions, enteritis, abscessed conditions of the appendix, bronchial tubes and the lungs, and with many resultant fatalities. Since water supplies are now under strict supervision of public health authorities, and since the milk supply, the canning and packing industries are operating under the scrutiny of state and federal health officers, it seems only logical that earnest consideration be given to the health of the mouths in which the food and water, so closely guarded, is chewed, mixed with saliva and swallowed.

Bacteriologists often refer to dirty, diseased mouths as the filthiest part of the human anatomy and readily admit that the saliva from such a mouth contains more pathogenic bacteria per cubic centimeter than sewage.

Dental inspections of hundreds of thousands of children reveal that 15% to 25% have hard tarter on their teeth or have diseased gums. Seventy percent to 90% have diseased teeth. It is not a wholesome picture.

In 1930, a gang of men arrived in our little town, Hanover, Kans., to put in a gas main and lateral system. In 15 years of practice, previous to this time, I was not called upon to treat more than six or eight cases of acute Vincent's infection per year. Within two weeks after the arrival of this gang members of 35 families of local men working on the job, had presented themselves for treatment for acute Vincent's infection. They varied in age

* Read before Section on Epidemiology of the American Public Health Association, Kansas City, Mo., Thursday, October 27, 1938.

from two to 62. With the city health officer, I investigated the drinking water facilities. We found that these men drank water from three jugs, with wet gunny sacks tied around them, and from two milk cans with a tin cup tied to the handles. The foreman was ordered to supply kegs with spigots and paper cups. The source of infection was stopped, but needless to say, it took almost a year to clear up all the cases of Vincent's infection in this little community. Fighting this epidemic, and my war experience combined to make me very conscious of the disastrous results of Vincent's infection to the health of the mouth. Ex-service men, who did not receive adequate and thorough treatment while in service, developed the worst type of suppurative gingivitis within the succeeding ten to fifteen years. They suffered from neuralgia, headaches, arthritis, gastritis, enteritis, depletionary diseases and many other disturbances. The only remedy was general extraction.

This background of experience with the active and passive results of Vincent's infection, I think, explains why one of my first projects, after being appointed director of the Division of Dental Hygiene, of the Kansas State Board of Health, was to attempt to discover the prevalence of Vincent's infection in school children. I hoped that the findings might lead to a public health program aimed at the preventive aspects of the disease.

Since practically all students of Vincent's infection avoided quoting statistics on the prevalence of the disease, even in their own practices, due to a lack of a set standard of reporting, I was confronted with the problem of setting up definite rules to govern my own survey, so that all groups would be handled in exactly the same manner. This problem was solved by using two standards already in existence. The classification of gum infections are: acute, subacute, and chronic. The public health laboratory had adopted the (xx, x and —) standard in 1932, when Vincent's infection was made a reportable disease in Kansas.

Objectives: The poor commissioners, welfare workers, and many dental groups were much interested in having a report of the mouth conditions of families on relief. The nurses in several schools had requested that we promote an educational feature, along with their programs of dental inspection and correction. Then, too, in our activities with the division of child hygiene we attempted to add to our regular routine of physical and dental inspections, specialties that would arouse more student interest. The addition of a bacteriologist from the state board of health, with portable laboratory, to our regular staff of clinical personnel, seemed to answer this demand and at the same time furnished us with the data we desired. The three objectives of the survey were: (1) to find the incidence of Vincent's infection in four groups

of varying economic status; (2) to test the possibilities of bacteriology as an educational feature, and (3) to arouse student interest in the subject of oral hygiene.

Our first survey was conducted among the relief families in Marshall County, in June, 1937. Clinic facilities were set up for dental examinations, and for making the Vincent's infection laboratory tests. A complete dental examination was made of each mouth and the condition of each mouth was charted. History of sickness in the last two years was also recorded. In 33 percent of the group reporting illness, the mouth condition was credited as a probable factor in the cause of the illness.

For taking smears, toothpicks with a very thin layer of cotton on the end, was used. Samples were taken from labial and lingual portions of the lower anterior teeth, loose gum flaps and third molar areas of the lower jaw, and the molar region of the upper jaw. The slides were numbered to correspond with the names of persons tested. Slides, with smears from mouths presenting apparent acute, subacute, or chronic gum infection, were checked with red pencil. The checks on the slides were recorded along with the bacteriological findings. This technic was followed in all groups tested. The stain used was gentian violet. Recordings of bacteriological findings were listed (xx) for strong positive, (x) mildly positive, and (—) negative.

To be continued

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Athlete's Foot,—A medical officer on a battle ship reports that he solved satisfactorily the problem of ringworm (athlete's foot) of the feet among the personnel aboard. According to the report, a prevalence of considerable magnitude among the men was cleared up entirely within three weeks.

The plan was simple. The medical officer had a powder prepared and caused the men with ringworm to apply this powder three times daily to the affected parts of the feet.

The prescription for the powder is as follows:

Salicylic acid	5 grams
Menthol	2 grams
Camphor	8 grams
Boric acid	50 grams
Starch	35 grams

Ringworm or athlete's foot is a widely prevalent infection. It often manifests itself between the toes in the form of what is sometimes called "soft corns". The use of the prescription given above is reported to have resulted in permanent cure of the infection. Illinois Health Messenger, April 15, 1939, p. 80.

A HEALTH SERVICE IN A TEACHERS' COLLEGE

CATHERINE VAVRA

A fourfold program teaches the student to protect his own health and that of his future pupils.

The health service in a teachers' college falls into four different categories. The first phase of the health program is the detection of defects through the annual physical examination, and the subsequent correction of these conditions through consultation with the individual's own family physician. The second phase of the program is one of prevention of disease. Vaccination for smallpox and for typhoid fever is made available. The Mantoux test, followed by x-rays of positive reactors, is used in our search for active cases of tuberculosis; the Wassermann test in the discovery of syphilis. There is a close follow-up of contacts in cases of communicable diseases. The third phase of the program, which is really the most important because of its far-reaching results, is the education of the students in health matters so that they will be able to cooperate with parents in teaching good health habits to the young children under their care. The fourth phase is the maintenance of a healthful school environment.

The State Teachers College at Duluth, Minnesota, gives health service to its 532 students, of which two-thirds are women and one-third are men.

In order to accomplish our aims, we have a health committee composed of the deans of both men and women, the members of the physical education department, the president of the college, and the staff of the health service department. This group, composed of faculty and medical advisers, meets to discuss the health program and to establish the policies of the health service. By having the faculty members meet with the medical advisers it is possible to have a free discussion of both the education and medical aspects of a problem. In this way, also, the health service keeps in close touch with the faculty members, and they cooperate very well in reporting students who are ill or who need help on health problems.

Students who are doing poor school work are often found to be spending too much time working outside of school or to be under par physically. By planning together on such cases, the faculty members are able to help the student change his daily program so that he may improve in his school work and maintain his health at the same time.

Faculty members occasionally report to us individuals who are not adjusting well to their problems. They may be depressed, continually on the defensive, antagonistic, or indifferent. On talking to the individual we may find him working under severe

nervous strain because of fear of not doing as well as a brother or sister, or of not passing at all, or of not doing as well as his parents expect. These difficulties can frequently be eliminated with a little understanding help by the faculty members.

The staff of the health service consists of a full-time public health nurse, a part-time physician for men, and a part-time woman physician. The department set-up includes a dispensary and nurse's office combined, a doctor's examining room, and three rest rooms—two for women and one for men.

Care of Students' Health.—Each year all students have medical examinations, and a permanent health record is kept. This record gives a complete picture of the individual's health during the years he remains in school, because each visit to the health service is recorded, giving the reason for the visit and the advice or treatment given. All illnesses are recorded, as well as the correction of the defects found in the physical examination.

After the examinations are completed in the fall, each student with a defect is called into the nurse's office for a conference. The student's health record is gone over with him, and the doctor's findings are explained, so that he understands exactly what his own health status is. This is the first thorough physical examination which many of our students have ever had, and it is a new experience in which they are very much interested. Since our students are of college age, we treat them as young adults who will assume responsibility for their own health.

Each of the college physicians is at the college for an hour once a week for consultation and follow-up.

The student is advised to see his family physician about the defects that have been found, and to tell his parents about the results of the examinations. Many students are found to need glasses; many need care of their teeth; a number do not eat correctly, or work too many hours in addition to trying to carry a full school load. Of course as these conditions are discovered, the student is consulted, and a more satisfactory schedule is worked out. We consider that this follow-up contact with each individual is the most satisfactory way of interesting the student in his own health.

Instances are found of boys who play instruments in orchestras five or six nights a week until late at night, and find themselves becoming tired and losing weight. These boys in every case, after being shown the folly of losing their health for the sake of extra spending money, have limited their playing to two nights a week over the week-ends.

Those students who are found to have heart defects, or other disabilities which interfere with their taking the regular required

physical education work, are given modified activities. This responsibility rests with the physical education department, upon the advice of the physician. Each individual is considered separately to determine the extent of his disability, and an activity given him according to his needs. For instance, a student with a certain heart defect may take archery or ballroom dancing when basketball would not be allowed. In competitive sports, also, the students who are planning to play are always given physical examinations before they are allowed to enter the group.

All students who are ill report to the nurse for advice or treatment of emergencies. Sick students are advised to go home to bed and to have medical care. If the sick student's own home is out of town, the nurse visits him at his home at the college, and if necessary gives care and helps him to secure a physician. In this way it is possible to keep a close watch on all illness and to be alert to possibilities of the spread of communicable diseases. The college has been extremely fortunate so far in having had only a single case of scarlet fever in the past three years. When an individual has an acute cold, he is advised to stay in bed for at least a day or two, and more if necessary. This plan decreases the spread of colds in the school.

Program for Prevention,—The second phase of the health program—the prevention of disease—is of course closely interwoven with the program just described for care of the students' health. Each year many students who have not been vaccinated against smallpox enter the college. And since the presence of a large proportion of susceptible individuals in a community provides a favorable situation for an epidemic of the disease, vaccinations are offered to the students for the cost of the vaccine. The response of the students is always good, because in the hygiene classes they are learning the value of prevention of disease and are glad of the opportunity to practice what they are learning. Typhoid fever vaccinations have also been made available during the past year. Wassermann tests are made upon request. The Mantoux test is given each year to all those who wish it, and every individual whose reaction is positive is advised to have a chest x-ray.

Educating Future Teachers,—The third phase of our health program is giving these young teachers adequate scientific information on health through the courses in hygiene, zoology, anatomy, physiology, psychology, and mental hygiene. The demonstration and practice of methods of presenting health information to young children are included in their three-months' period of practice teaching under the supervision of the teachers in the demonstration school. When the children have their health inspection by the nurse, the student teachers observe and assist with the procedure.

The course in hygiene, which is partly taught by the nurse, has three purposes: (1) to help the student form good health habits and understand the reasons for such practices, (2) to acquaint him with the physiological differences between adults and children, (3) to prepare him for teaching health to children.

He learns about the causes and symptoms of communicable diseases, how they are transmitted, and what measures can be taken to prevent their spread. He learns which diseases can be prevented by immunization and when these measures should be given.

Throughout the course, the needs of the school child are emphasized so that the young teacher understands the hygiene of the school-age child as well as that of adults. He is also taught some first aid in the hygiene course so that he will know the principles of the proper care of emergencies.

Healthful Environment.—The health service cooperates closely with the deans of men and women in setting the standards for the living quarters of students outside the dormitory. Each year the houses are inspected by the nurse and deans to be sure that the lighting is adequate for studying, the beds satisfactory, and the cooking facilities—for those doing light housekeeping—satisfactory. The students who are working part time are advised to carry one less subject than those who are not working.

Through these activities of formal teaching and actual demonstration of modern methods of prevention, diagnosis, and treatment of disease, it is hoped that the students will be able to handle health problems in the most satisfactory way. Reprinted from Public Health Nursing, November 1938, p. 671. Adapted from a radio address given over station KDAL, Duluth, Minnesota.

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William J. Sheehan, M.D.,—Dr. Sheehan, a conscientious and interested worker in the school health movement, and a Fellow of the American School Health Association, died at Port Chester, New York, April 7, 1939. He was born in 1871, and attended Albany Medical School, receiving his license in 1897.

EDITORIALS

Eternal vigilance is the price of safety in health protection, as well as in many others of the activities of our modern complex lives. Failure to test new factors in school sanitation sometimes leads school authorities into grievous error.

The new may be a menace. This sounds as though your editor's mental attitudes were back in the old podauger days, when this implement was used to bore large holes in the bunk pieces of cedar rail fences. Our attitude is not against the new, but one of caution, that we may carefully investigate *all* the health factors involved when enthusiasts advocate a thing that seems to them wholly good.

For many months those whose interest lies in pushing the campaign for sight conservation have been urging various changes from the usual class room equipment of black blackboard and white chalk. Several combinations have been advocated — green tinted boards and white chalk, black boards and yellow chalk, and even white boards and black chalk. A few school systems are installing test rooms of this last sort. So far as conservation of vision is concerned these combinations may be an improvement over the usual set-up. What are some of the other health factors involved? Is it necessary to use a more gritty material or one that gives off more dust when a change is made in color? Is it necessary to use some dangerous chemicals to give colors to the board or to the chalk, or, as a matter of economy, is the manufacturer likely to use such chemicals?

There has been considerable agitation for the use of yellow chalk. Some school systems have made the change to yellow.

It is reported that in Wisconsin an outbreak of lead poisoning has occurred among school children. Investigators started the usual questioning and testing that is a part of modern health protection. Was this disease general to the community? No. It was confined to school children. What factor in the school environment might cause this disease? Which of these was a newly appeared factor?

The testimony and the evidence pointed at this new chalk. How can the suspicion be proven? Test the air! The class room air, when tested for lead, was found to contain several times the amount of lead that would be tolerated by public health authorities in industries handling lead products. As a precaution, the use of yellow chalk has been forbidden in the schools of Milwaukee.

Lead is commonly used as an ingredient in colored chalks because of its cheapness. No chalk—other than white—should be used in the schools until manufacturers change their habit, and until chemical tests prove these new chalks free from lead or other toxic material. A laboratory test of one yellow chalk showed 6% lead content.

One authority has suggested that high school chemistry departments would be able to give much more practical and much more

interesting courses if studies of materials used in the schools—from chalk to food—were made and demonstrated to pupils and, if necessary, to parents.

What things in the class room other than colors of blackboards and chalk, affect acuity of vision and eyestrain. The quality and color of page, size and style of type, and the set-up as regards space between letters and words, between lines, and length of line are all factors, as is the age of pupils.

The relative height of seat to desk and the tallness of the pupil should be considered, and proper adjustments made. Great stupidities sometimes occur in the seating of children in schools. A low seat may be put behind a high desk and, figuratively speaking, the nose of the child rubs the book, or a high seat is put behind a low desk, and the child has to assume a cramped caved-in posture in order to see his work clearly. Your editor has known a third grade class to be placed in a room equipped with seats for a sixth grade class, and no change made in seating until the state Director of Health Education, in the course of a routine inspection, brought the matter to the attention of the Superintendent. What was the principal doing to earn his salary? Certainly not protecting the vision or comfort of his pupils.

Boards of Education are planning the repairs to be made for next year. Has this matter of sight conservation been emphasized to them? Are grimy class room walls to be cleaned or redecorated? If to be redecorated is the color chosen that light tan or cream that gives best lighting conditions, and is the paint or other decorating material of a kind that will not give back a glistening glare into the eyes of pupils? If artificial lighting is used, as it often is, are the fixtures of proper type and is the desk or bench candle power light proper in amount? Are window panes habitually kept clean?

Advice in these particulars is part of the duties of the school health service.

ABSTRACTS

Functions of the School Nurse,—The most recent authoritative statement of the functions of the school nurse is that of the Committee on Administrative Practice and Public Relations of the National Organization for Public Health Nursing published in the November, 1936, issue of its magazine.

The public health nurse in relation to school health—

A. Participates in formulating and developing a health education program based on the needs of pupils.

B. Assists physicians in the examination of pupils and the interpretation of findings to teachers, parents, and children.

C. Teaches the value of adequate health supervision and facilities for medical and nursing care, and assists in securing correction of defects.

D. Inspects pupils, and instructs teachers, parents, and pupils to observe and recognize deviations from normal health.

E. Assists in the control of communicable diseases through teaching the recognition of early symptoms, the importance of isolation, and the value of immunization.

F. Promotes the maintenance of a healthy school environment—physical, emotional, and social.

G. Arranges the care of emergency and minor injuries and illnesses in accordance with medical standing orders.

H. Participates in a program for the prevention of handicaps, and in the care and education of handicapped children.

I. Develops relationships to coordinate school nursing activities with all other health forces of school, home, and community, and to promote community health resources.

J. Participates in curriculum making. Nurses who are qualified may instruct classes in principles of healthful living and care of the sick.

In considering this statement of function as a whole, you see a general shift of emphasis toward stimulation of child and family to want and to obtain service with a lessening of "doing of service for them" by the nurse; also, an emphasis on the nurse's part in the whole educational scheme—not just her own corner of it.

It is also evident that the so-called "specialization" of the school nurse applies only to the age group served, and that a most general and broad type of service is required of her for this group, including all the specialties of nurses assigned to communicable disease control, tuberculosis, syphilis, gonorrhea, poliomyelitis, pneumonia, orthopedic service, mental hygiene, supervision of personal health habits and of the environment, home and school. She cannot, if she would, avoid participation in projects aimed at social health. Marie Swanson, The Journal of Health and Physical Education, September, 1938, pp. 416, 417, 461-462. Abstracted by E. E. Kleinschmidt, M.D.

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The Function of the Health Teacher,—There are two hypotheses which warrant consideration. The first is that healthful living does not consist of an accumulation of health habits, but does depend upon the acceptance of intelligent reasons as guides or rules of conduct. If this is true, then health knowledge and health instruction must bear a large part of the responsibility for healthy living. The second hypothesis is almost a corollary to the first, that the classroom teacher is the most important person in the program of health education.

Regarding a course of study in health, I hold these views:

1. It should be based on life experiences and not subject matter topics.

2. Subject matter should be presented as it contributes to these life experiences.

3. Different life experiences such as Growing, Keeping Well, and Making Ourselves Respected should be used as major units for different semesters.

4. Many, if not all, of the so-called "Health Rules" should be included in each unit, but the point of view and emphasis should be different for each grade.

5. At the completion of the intermediate grade, pupils should have received a complete, balanced, unified course of health instruction.

Since I have so strongly emphasized the importance of knowledge in health instruction, I must remind you of the psychological principles relating to the use of knowledge. The first is that "knowledge in and of itself does not necessarily influence conduct," and the second, "knowledge must serve some drive before it functions in conduct." Knowledge must be thought of as a tool used to create and develop worth-while living. It is never an end in or for itself. But as one tool in the big program of health education I present knowledge through the finest kind of instruction. May you keep this tool polished and sharp so that its work may lead to happier living for all. Lillian B. Davis, The Journal of Health and Physical Education, September 1938, pp. 420, 421, 451. Abstracted by Earl E. Kleinschmidt, M.D.

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Effects of Basketball on Junior High School Boys,—Bowyer and Anderson* show that with the new ten second rule the game of basketball is extremely strenuous on junior high school boys from 12 to 16 years of age. To determine whether there is any harmful effect on the hearts of boys of this age playing basketball, they have checked the blood pressure and heart rates of boys before and after each basketball game. They also made a pre-season and post-season test. The mean or average of the pre-season systolic pressure was 108 plus or minus 2.78 and the mean of the post-season pressure was 111.6 plus or minus 2.95. The true difference between the means was 3.6, which was a gain in systolic pressure. The critical ratio was 0.89, which indicates that the mean of the pre-season and post-season test is not statistically significant. The authors, therefore, draw the conclusion from their studies that basketball under the *old* rules did not have any harmful effects on junior high school boys.

With their conclusions of 1936-1937 showing no harmful effects, they continued the study under the *new* rules. One of the most interesting comparisons is made between a hard game and an easy one. In the easy game, sixteen boys played at some time or other. There was not a boy on the squad who played the whole game. The

* Effects of Basketball on Junior High School Boys. A. B. Bowyer and N. S. Anderson, Buckhannon, West Virginia Medical Journal, Charleston. February 1939, p. 89.

heart rate taken twenty minutes after the easy game show that in all the boys but one it had returned to normal, and in this one it was only a fraction higher. The results of a hard game show that the blood pressure of some of the boys goes down, while the pressure of others is increased by exercise. When the blood pressure goes below normal, it indicates a period of staleness or acute fatigue. The boys who did not play the full game would return to normal very quickly after the game. From this the authors decided that a full game of basketball under the new rule was too strenuous on junior high school boys.

Their conclusion is substantiated by S. J. Morris of the Health Unit of West Virginia University. The mean pulse rate of the four hardest games of the authors' squad was found to be 146 five minutes after the game. After twenty minutes the heart rate was still 115. The pre-season and post-season tests were taken under ideal conditions without the emotional strain of a game. The post-season test shows that the boys' heart rates are higher while their blood pressures are lower. The high heart rates and low blood pressure indicate periods of fatigue that naturally place a strain on the circulatory system. The authors are unable to say with any final degree of authority, but the probabilities are that if this type of strenuous exercise is practiced year after year during the adolescent period it will produce a weakened circulatory system, which may develop into a handicap in later life. They conclude that basketball as played under the present rules is too strenuous for junior high school boys unless several boys, given each at least one quarter of the four to rest in, participate in one game.
As abstracted in Journal A. M. A., April 15, 1939, p. 1534.

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School Swimming Pool Operation and Maintenance,—In order that swimming pools may be "above reproach," there is presented herewith a resumé of suggested methods of operation together with regulations regarding their maintenance.

I. *Water Supply,*—When it is considered that a single bather will contaminate from 800 to 1,200 gallons of new water to the point where the water is apt to be dangerous to other swimmers, it can readily be seen how important it is that the water be maintained in a clean and sterile condition. Two methods may be used to accomplish this result: (a) the "fill and draw method"—emptying the pool and refilling at frequent intervals; (b) the "recirculation method" with filtration and disinfection.

The second is the method preferred by far, because if properly carried out, it affords a far cleaner, purer, safer, and warmer swimming pool than is possible to effect by the first.

II. *Recirculation,*—The heart of the swimming-pool circulation system is the pump in the circulating lines. In conjunction with this circulating system, other equipment has been provided to

afford various treatments for the pool water, including water filters, a water heater, and equipment for disinfection and coagulation.

Leading from the outlet of the pool to the circulating pump is a pipe line in which a hair catcher or suction strainer is generally installed. This suction strainer is a metal chamber equipped with a wire basket through which all water reaching the pumps must pass. The function of the strainer is to collect debris which must be removed before it gets to the pumps or into the filter.

The next piece of equipment in the circulation line to consider is the centrifugal circulating pump.

III. *Filtration,*—From the pumps the water is forced through pressure filters. Filters are usually installed in banks of two or three units in parallel, in order to permit continuous operation and recirculation while one of the units is out of service for cleaning or repairs.

The system should be so planned that all the water in the pool will pass through the filters once in eight hours or less, and at a rate of not more than three gallons per minute per square foot of sand surface in the filter. The filters are usually of the pressure type, and are large iron tanks with layers of screened sharp filter sand and filter gravel not less than 36 inches deep which clean the water passing through by removing particles of dirt. Dirt removed from the water would remain in the filters unless it were washed out. Provision must be made therefore to backwash and clear the filter sands.

IV. *Disinfection,*—The rules covering the sanitation of swimming pools adopted by the Department of Health of the State of California require that at no time during the period when the pool is open to patronage shall there be more than 1,000 total bacteria per cubic centimeter when tested on a standard agar medium for 24 hours at 37.5 C., and that the B. coli shall not be present in more than 50 per cent of the one cubic centimeter portions of any sample examined when confirmed on Endo medium.

In order to maintain such a condition of the pool water, disinfectants are added. In general, swimming-pool disinfection is accomplished by one of three methods:

(a) Sterilization by ozonation.
(b) Sterilization by means of the ultra-violet ray.
(c) Sterilization by chlorination.

Of the three methods, the last is preferred and is effected by means of chlorine gas, which is injected into the circulating line adjacent to the filters before this water is returned to the pools.

By S. A. Cook. The American School Board Journal, August 1938, pp. 22-23. Abstracted by Earl E. Kleinschmidt, M.D.

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Findlay Schools Survey Children's Eyes,—The Findlay city schools, through the cooperation of the Ohio State Department of

Education and the Ohio Commission for the Blind, have recently conducted an eye survey of the public-school children for the purpose of determining children eligible for a sight-saving class, and further for the purpose of conserving the eyesight of all the pupils.

A meeting of teachers was called, at which time a special eye nurse from the Ohio Division of Public Assistance instructed them in the use of the Snellen eye charts to be used for the preliminary eye examination. All school children were examined by the teachers. From their findings a special tabulation was made of all children whose vision was 20/40 or worse. This list was divided into two groups; namely, those children whose cases were not serious but where some correction was needed; the second, the more serious cases, which were selected to go through the diagnostic clinic. There were 364 children in the first group and 190 in the second group.

Parents were urged to accompany their children to the clinic so that they could obtain first-hand information from the doctors relative to defects in eyesight.

After the clinic, the case reports were taken to Columbus for a complete analysis and recommendations for correction by the staff ophthalmologist of the Ohio Commission for the Blind. Within a period of four weeks the analyses and recommendations were sent to the superintendent. They had been divided into three groups as follows: (1) recommended cycloplegic refraction, 116 cases; (2) recommended cycloplegic refraction and general physical examination, or other special examination, 16 cases; (3) surgical cases, 5 cases.

In order to establish the financial status of the families of the children needing this correction and their ability to take care of the matter, the superintendent held a personal interview with the children and parents of these 137 cases. As a result, 78 children were given attention and secured glasses; in about 40 cases the parents promised to have eyes examined and glasses fitted during the summer or fall; in two or three cases only did the schools fail to get cooperation from the parents. In those cases where parents were unable to furnish glasses for their children, it was done through charity—personal contributions, and the Kiwanis Club.

Of the 364 cases in the first group, those children whose cases were not serious but where some correction was needed, no definite record of results could be obtained as most of these were handled by the parents. Out of the 554 cases of subnormal vision, it was estimated that 400 children were fitted with glasses. By F. L. Kinley. The American School Board Journal, October, 1938, p. 53. Abstracted by Earl E. Kleinschmidt.

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Old School Buildings Can Be Well Lighted,—In a recent address discussing the repair and reconditioning of school buildings

at Akron, Ohio, Mr. M. M. Konarski called attention to the fact that conditions in old school buildings can be overlooked so long as the buildings are well lighted, are clean, and are reasonably well ventilated.

Speaking to a group of illuminating engineers Mr. Konarski said: "For artificial illumination, the rooms of these old buildings had one or two electric sublets each, some with three and a few with four and six outlet installations, drop cords holding bare lamps of various capacities, whatever the traffic would bear. The wiring back of the outlets was either the old dependable knob and tube, or B-X wire mold, or in a few cases rigid conduit, loaded beyond normal capacity.

"To protect these old structures, we decided to discard fuses and substitute air circuit breakers. For the sake of economy, flexibility, and future additions to the lighting system, we decided to use a 110-220-volt 3 wire system with a wire service to the respective basement, first- and second-floor branch distribution panels. Each wire service is of sufficient capacity to allow for any future additions in lighting from the present 300-watt lamp per outlet. Proper provisions were made to keep an equal balance on the lines under varying conditions.

"In addition to new wiring and new lighting fixtures, the crumbling plaster and wood lath in these buildings were torn down from the ceilings and replaced with paneled asbestos board, then painted an ivory tint. The side walls were replastered or plaster patched, and painted a light buff. The discolored grimy varnished woodwork was painted a soft pastel green, the desks were refinished, and new semi-indirect lighting fixtures were installed, in number and distribution to deliver an average of ten foot-candles of light where one foot-candle had been an excellent average.

In concluding his discussion, Mr. Konarski stated that the selection of light fixtures was based on the latest recommendations of the Illuminating Engineering Society committee on standard specifications for school building lighting. The American School Board Journal, October, 1938, pp. 58, 60. Abstracted by Earl E. Kleinschmidt, M.D.

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Tuberculosis Case Finding,—Undoubtedly one of the big jobs of the School Health Service is case finding. However, we have a further responsibility to the other public health activities of the community. The first principle proposed by the Committee on School Health of the American Academy of Pediatrics was: "The school medical service should be thoroughly coordinated with the other community medical facilities. (a) The service should be conducted in a manner that will encourage the cooperation of all proper community medical facilities."

When the tuberculosis program of the community is directed at tuberculosis case findings where the cases are most numerous,

then a case finding program in the elementary schools is not quite consistent with the community program. Such inconsistency is not altogether encouraging to cooperation with the community tuberculosis program.

Plunkett's analysis of tuberculosis case findings costs in New York State gives evidence in support of his conclusion that it is about 40 times more expensive to discover a case of tuberculosis among children than among adults. He found that the cases found among those who were 15 years and over, were 41 times as many as among children under 15 years.

Of course, it might be that the school health program is so well developed that it has already done the job of case finding of children who might benefit from medical care. Surely such a situation is rare if it exists at all. If it is true that all the crippled children, all the eye-strain, all the obstructing adenoids, the hard of hearing, the under-nourished, and all the children most likely to be in need of medical care have already been found, then we might consider whether tuberculosis case finding is the next step, even though it is only one fortieth as productive of results as among adult groups. Also it may be worthwhile to do control studies of special groups in schools, but that should not be confused with case finding where the efforts will yield the greatest returns at a minimum of expense.

Furthermore, we should not forget that the school's job does not stop with case finding—but that education and getting something done for the cases is also a part of the job. We must ask ourselves,—Have we done all that can be done to see that the community medical facilities provide the medical care needed?

In the light of the analysis of Plunkett and others, it seems clear that the administrator responsible for school service should not undertake any program involving tuberculosis case finding in the elementary schools, unless the tuberculosis leaders of the community accept it as encouraging cooperation with the Tuberculosis Control Service. Is there any proper exception to this policy?

"Case-Finding—An Evaluation of Various Techniques"—Robt. E. Plunkett, M.D., New York State Department of Health—Division of Tuberculosis, Albany, New York. The American Review of Tuberculosis—Vol. XXXIX—No. 2, February, 1939—Page 256. Abstracted by Harold H. Mitchell, M.D.

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REVIEWS

The Administration of High School Athletics. By *Charles E. Forsythe.* Prentice-Hall, Inc., New York, 1939, pp. 413, price $2.00.

This is the sort of text that is badly needed in the field of secondary school administration of physical education. It is devoted to that special phase of physical education which is called athletics, and in this case is applied largely to interscholastic athletic competition.

Because it is compiled and written by one who is actually administering interscholastic competition at the high school level, it has a practical point of view. Starting with the history and objectives of such competition, it speaks of the National Federation of State High School Athletic Associations, and of State High School Associations, then discusses regulations controlling eligibility and contests. It discusses policy and administration for local programs, for contest management, and goes on to speak of equipment, awards, finances, and budgets. It discusses the very important basic element of safety and sanitation in athletics, and those things which have so much to do with safety, namely: the facilities for athletics. There is a chapter on intramural athletics which, after all, is the foundation on which a true interscholastic program should be built. It also mentions athletics for girls. The brief discussion of junior high school athletics is not emphasized as much as the reviewer could wish. Great danger rests in interscholastic competition at that age level, where chances of strain and injury are so great.

This text has a great deal of practical information valuable to those who, either from the health side or from the educational side, have to do with administration at the secondary school level. Charles H. Keene, M.D.

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Out Of The Running. By *G. Gertrude Hoopes.* Charles C. Thomas, Baltimore, Maryland, 1939, pp. 158, price $2.00.

This is an autobiography of a woman now sixty years old. From birth athetoid movements were present and extreme neuromuscular disability persisted during early infancy. She began to sit up at about five years of age. Later, walking was accomplished with great effort with some assistance. Following a fall, this ceased, and for many years locomotion has been by means of a specially constructed tricycle. Articulate speech has never been possible. Miss Hoopes communicates by means of sign language and alphabet roll.

This is a most interesting personal narrative of heroic efforts to overcome great physical handicaps. Only superior intelligence made it possible to get happiness and usefulness from life. To those who are interested in the training of persons showing some chorea congenita accompanied by speech inability, this is a remarkable narration of what can be accomplished, given intelligence and perseverance on the part of the person afflicted. Charles H. Keene, M.D.

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Principles of Health Education, *C. E. Turner, A.M., D.Sc., Dr. P.H.* D. C. Heath & Company, Boston, 1939, 2nd Edition, pp. 351, price $2.00.

This text starts with a discussion of the relationship between health education on the one hand and general education and public

health on the other. It stresses the development and scope of the modern school health program, and states the reasons for health education in the schools. It next discusses the procedures and activities, the educational outcomes, and the health improvements taking place in an experiment in health education carried on in Malden, Mass., under Dr. Turner's personal direction.

After discussing the underlying principles of health education, the reasons and methods of planning an organized program in health education are discussed. There follows, naturally, a section on the needs of the pupils, the advantages and necessities of cooperative activities in a health program, and describes some of the routine procedures. The author also speaks of the necessary gradation of material, the type of class room instruction, and gives special emphasis to health education in the junior and senior high school. There follows some discussion of source material, and of the evaluation of health education and the measurement of results, and of the absolute necessity, if a program is to be successful, of the cooperation of health education in the school with that in the community.

This is an excellent text, based on years of experience in personal teaching at the Massachusetts Institute of Technology, and of organization and supervision of health program development in public schools. It carries a large number of practical helps and suggestions. It is a distinctly valuable addition to the literature, and helps greatly in this extremely important and rapidly expanding field of education. Charles H. Keene, M.D.

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MEETINGS

The Health Section of the World Federation of Education Associations, through its Chairman, Dr. C. E. Turner, cordially invites you to participate in the meetings of the Eighth Biennial Conference to be held in Rio de Janiero, Brazil, August 6-11, 1939.

A working conference is being developed where leaders and teachers, from all parts of the world, will share their experiences in health education, health services, and physical education in the schools.

Program and information regarding especially arranged tours can be secured from the Executive Secretary, Health Section Secretariat, 200 Fifth Avenue, New York.

The American School Health Association and the American Public Health Association, October 16-20, Pittsburgh, Penn. The headquarters of the American School Health Association will be at the Hotel Roosevelt. Members should make early reservations of rooms at this hotel.